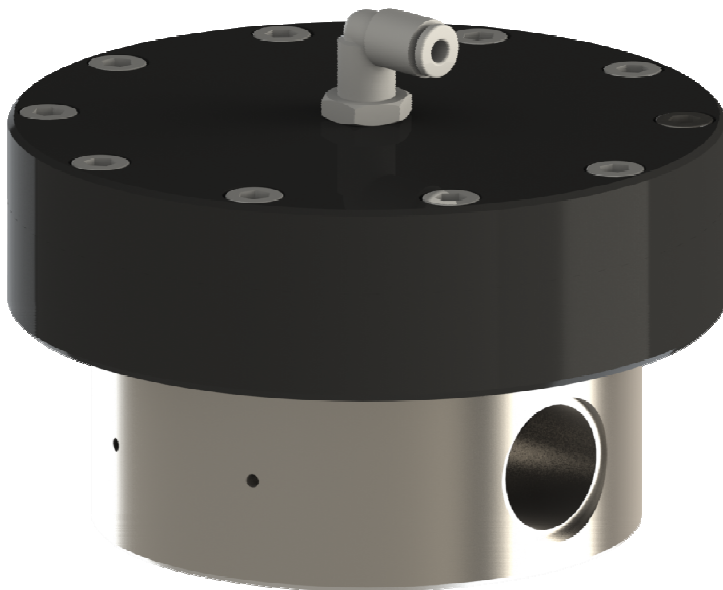


# ***BINKS***<sup>®</sup>

## **Instruction Manual**

### **Back Pressure Regulator (Low Shear 3/4")**

- **502742 - Pilot Control**



**BINKS**

## Product Description

BPR - 107757, 107758, 107748, 107749,  
107750, 107754, 107755, PRV22

**This Product is designed for use with:** Solvent and Water based Materials

**Suitable for use in hazardous area:** Zone 1 & 2

**Protection Level:** II 2 G X T4

**Manufacturer:** Binks,  
Justus-von-Liebig - Strasse,  
63128 Dietzenbach. DE

## EU Declaration of Conformity

**We: Binks declare that the above product conforms with the Provisions of:**  
Machinery Directive 2006/42/EC  
ATEX Directive 94/9/EC

**by complying with the following statutory documents and harmonized standards:**

EN ISO 12100: Safety of Machinery - General Principles for Design

EN ISO 4413: Hydraulic Fluid Power - General Rules and safety requirements

EN ISO 4414: Pneumatic Fluid Power - General Rules and safety requirements

EN1127-1: Explosive atmospheres - Explosion prevention - Basic concepts

EN 13463-1: Non electrical equipment for use in potentially explosive atmospheres - Basic methods and requirements

EN 13463-5: Non electrical equipment for use in potentially explosive atmospheres - Protection by constructional safety

Providing all conditions of safe use stated within the product manuals have been complied with and that the final equipment into which this product is installed has been re-assessed as required, in accordance with essential health and safety requirements of the above standards, directives and statutory instruments and also installed in accordance with any applicable local codes of practice.

D Smith (General Manager)  
01 November 2012

**General Description**

A complete range of Binks low shear back pressure regulators are available to suit most pressure and technical requirements for paint circulating systems.

This equipment is designed for use with Solvent based and Waterborne materials. Suitable for use in Zone 1 and 2, Protection Level: II 2 G X

| Model          | Ideal Working Range |              | Max Static Pressure | Wetted Materials |
|----------------|---------------------|--------------|---------------------|------------------|
| 502742 - Pilot | 1-15 Bar            | 2 – 30 L/min | 25 Bar              | Stainless Steel  |

This ¾” model is extremely flushable as no gauge ports passages are drilled into the body to create ‘dead’ areas.

The Binks low shear back pressure regulators adjust to control the paint system back pressure within the pipe line and minimises ‘paint shear’ due to the large surface area of the valve seating.

The ‘back pressure’ regulator responds to the changes in system fluid pressure, (due to variable paint usage) by dynamically adjusting to maintain the set pressure, thus maintaining the required system back pressure.

If the pressure in the system drops below the regulated level (system demand exceeds pump supply rate) then the valve will close.

 **WARNING**

**Directions for Working Safety**

This Product has been constructed according to advanced technological standards and is operationally reliable. Damage may, however, result if it is used incorrectly by untrained persons or used for purposes other than those for which it was constructed.

The locally current regulations for safety and prevention of accidents are valid for the operation of this product under all circumstances.

International, national and company safety regulations are to be observed for the installation and operation of this product, as well as the procedures involved in maintenance, repairs and cleaning.

These instructions are intended to be read, understood and observed in all points by those responsible for this product. These operating and maintenance instructions are intended to ensure trouble free operation. Therefore, it is recommended to read these instructions carefully before start-up. Binks PCE cannot be held responsible for damage or malfunctions resulting from the non-observance of the operating instructions. These instructions including regulations and technical drawings may not be copied, distributed, used for commercial purposes or given to others either in full or in part without the consent of Binks PCE.

We reserve the right to alter drawings and specifications necessary for the technical improvement of this product without notice.



**Equipment Misuse Hazard**

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose.
- Do not alter or modify this equipment. Use only genuine Binks PCE parts and accessories.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure stated on the equipment or in the Technical Data for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- Use fluids and solvents which are compatible with the equipment wetted parts. Refer to the Technical Data section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose hoses to temperatures above 82°C (180°F) or below -40°C (-40°F).
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.



**Fire, Explosion and Electric Shock Hazard**

Improper grounding, poor ventilation, open flames or sparks can cause a hazardous condition and result in a fire, explosion, or electric shock.

When installed and operated in accordance with its instructions, the pump is approved for operation in Zone 1 (Europe) & Division 1 (North America), hazardous locations. (ATEX Cat 2)

- Electrical equipment must be installed, operated, and serviced only by trained, qualified personnel who fully understand the requirements stated in this instruction manual.
- Ground the equipment and all other electrically conductive objects in the spray area. After grounding test with ohmmeter to ensure earth continuity is 1 ohm or less.
- Keep all covers tight while the motor is energized.
- If there is any static sparking or you feel an electric shock while using this equipment, stop spraying/dispersing immediately. Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the build up of flammable fumes from solvents or the fluid being pumped.
- Keep the pumping area free of debris, including solvent, rags, and gasoline.
- Electrically disconnect all equipment in the pumping area.
- Extinguish all open flames or pilot lights in the spray/dispense area.
- Do not smoke in the spray/dispense area.
- Do not turn on or off any light switch in the spray/dispense area while operating or if fumes are present.



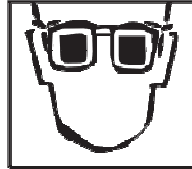


# WARNING



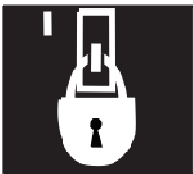
**READ THE MANUAL**

Before operating equipment, read and understand all safety, operation and maintenance information provided in the operation manual.



**WEAR SAFETY GLASSES**

Failure to wear safety glasses with side shields could result in serious eye injury or blindness.



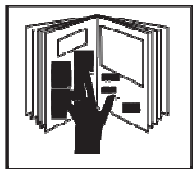
**DE-ENERGIZE, DEPRESSURIZE, DISCONNECT AND LOCK OUT ALL POWER SOURCES DURING MAINTENANCE**

Failure to De-energize, disconnect and lock out all power supplies before performing equipment maintenance could cause serious injury or death.



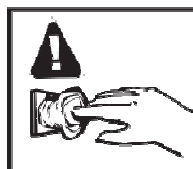
**NOISE HAZARD**

You may be injured by loud noise. Hearing protection may be required when using this equipment.

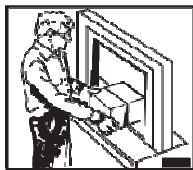


**OPERATOR TRAINING**

All personnel must be trained before operating equipment.



**KNOW WHERE AND HOW TO SHUT OFF THE EQUIPMENT IN CASE OF AN EMERGENCY**



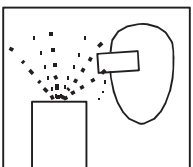
**KEEP EQUIPMENT GUARDS IN PLACE**

Do not operate the equipment if the safety devices have been removed.



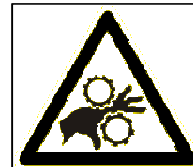
**HIGH PRESSURE CONSIDERATION**

High pressure can cause serious injury. Relieve all pressure before servicing. Hose leaks, or ruptured components can inject fluid into your body and cause extremely serious injury.



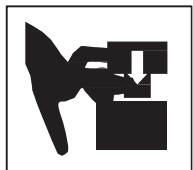
**PROJECTILE HAZARD**

You may be injured by venting liquids or gases that are released under pressure, or flying debris.



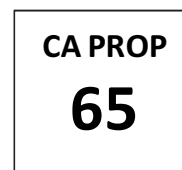
**AUTOMATIC EQUIPMENT**

Automatic equipment may start suddenly without warning.



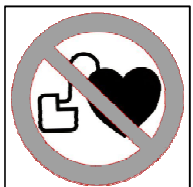
**PINCH POINT HAZARD**

Moving parts can crush and cut. Pinch points are basically any areas where there are moving parts.



**PROP 65 WARNING**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



**MAGNETIC FIELD PRESENT**

You may be subjected to magnetic fields which may interfere with the operation of certain pacemakers.



**MAGNET HAZARD**

Take care when handling magnets. Avoid getting magnets in close proximity of each other. Injury or damage to magnets may result.

## ***Installation - Mounting***

1. Connect the unit into the paint system pipework; either port can be used as the inlet connection. Connection ports are ¾" NPT
2. Always connect the unit using the correct fittings and a suitable thread sealant that is compatible with the fluids passing through the valve.
3. A pressure gauge should be mounted directly into the pipework on the inlet side of the unit to allow precise adjustment for the regulated back pressure.

## ***Installation – Setting to work***

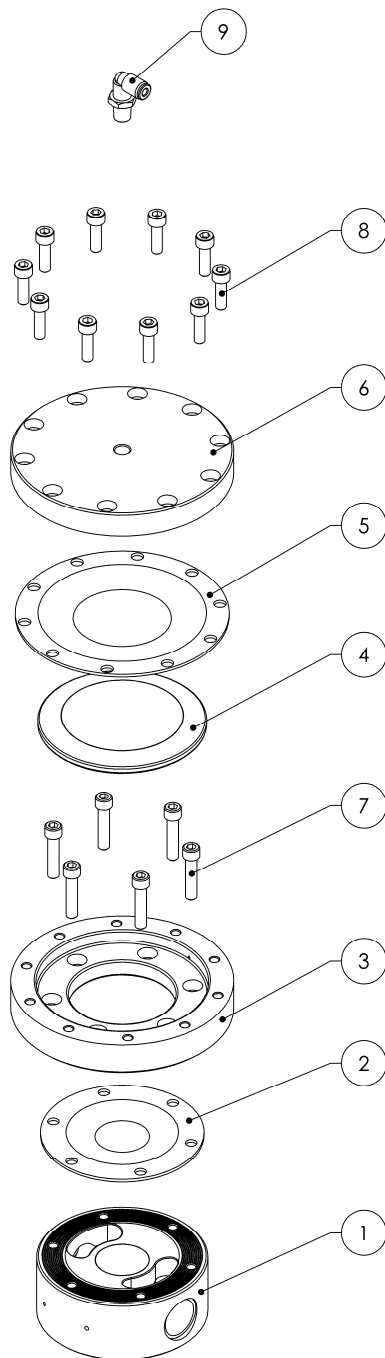
The Back pressure regulator is tested with demineralised water, therefore the fluid chamber should be flushed with suitable material prior to use.

Note: Before attempting any maintenance ensure that all relevant directions for working safety are followed.

1. If circulating system pressure testing is carried out with the back pressure regulator in circuit, the fluid test pressure must not exceed 25 Bar and the back pressure valve **must** 'be unloaded' have no air pressure acting on the diaphragm.
2. When the paint pipework is to be flushed with the back pressure regulator installed, the back pressure regulator **must not** have any air pressure acting on the diaphragm. This status must remain until the paint system has been accepted as clean and contaminant free.
3. Following pressure testing and flushing procedures the diaphragms should be examined and replaced if necessary to ensure the integrity of the unit prior to use in production.
4. Adjust pilot air pressure until the desired system fluid back pressure is achieved on the pressure gauge in the BPR inlet pipework.

**Parts List - 502742**

| Item | Part No. | Description                        | Qty | Remarks |
|------|----------|------------------------------------|-----|---------|
| 1    | 192470   | Body                               | 1   |         |
| 2    | 193701   | Composite Diaphragm                | 1   |         |
| 3    | 192575   | Base                               | 1   |         |
| 4    | 192576   | Diaphragm Plate                    | 1   |         |
| 5    | 192577   | Diaphragm (Composite)              | 1   |         |
| 6    | 192574   | Cap                                | 1   |         |
| 7    | 163061   | 1/4" UNC x 3/4" Skt Head Cap Screw | 6   | 12Nm    |
| 8    | 163952   | M6 x 20 Skt Head Cap Screw         | 10  | 12Nm    |
| 9    | 174647   | 1/8R - 4 mm Push Loc Elbow         | 1   |         |



| Recommended Spare Parts |          |                     |     |           |
|-------------------------|----------|---------------------|-----|-----------|
| Item                    | Part No. | Description         | Qty | Remarks   |
| 5                       | 192577   | Diaphragm           | 1   | Air Pilot |
| 2                       | 193701   | Composite Diaphragm | 1   | Fluid     |
|                         |          |                     |     |           |



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